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Attorneys for Defendant
GIANT INTERNATIONAL (USA) LTD.

UNITED STATES DISTRICT COURT

FOR THE SOUTHERN DISTRICT OF CALIFORNIA

JENS ERIK SORENSEN, as Trustee of SORENSEN RESEARCH AND DEVELOPMENT TRUST,

Plaintiff,

v.

GIANT INTERNATIONAL (USA) LTD., a Delaware corporation, and DOES 1-10,

Defendants.

GIANT INTERNATIONAL (USA) LTD., a Delaware corporation,

Cross-Complainant,

v.

JENS ERIK SORENSEN, as Trustee of SORENSEN RESEARCH AND DEVELOPMENT TRUST,

Cross-Defendant.

No. 07-CV-02121-BTM-CAB

DECLARATION OF ELIZABETH G. BORLAND IN SUPPORT OF DEFENDANT GIANT INTERNATIONAL (USA) LTD.'S *EX PARTE* APPLICATION TO CONTINUE EARLY NEUTRAL EVALUATION CONFERENCE

I, Elizabeth G. Borland, declare as follows:

1. I am an attorney at law licensed to practice in the State of Georgia, and have been granted *pro hac vice* admission by this Court. I am a partner in the Atlanta law firm of Smith, Gambrell & Russell LLP, attorneys of record for Defendant and Counterclaimant Giant International (USA) Ltd. ("Giant"). I submit this declaration in support of Giant's *Ex Parte* Application to Continue the Early Neutral Evaluation Conference currently scheduled in this action on January 28, 2008.

2. Giant received a letter from J. Michael Kaler, counsel for Sorensen Research & Development Trust ("Plaintiff") in October 2004, in which Plaintiff accused Giant of infringing U.S. Patent No. 4,935,184 ("the '184 Patent"). Plaintiff also offered Giant a license under the '184 Patent. A true and correct copy of Mr. Kaler's October 21, 2004 letter to Giant is attached as Exhibit 1.

3. Between October 2004 and May 2006, Plaintiff's counsel and Giant's counsel exchanged lengthy correspondence debating the merits of Plaintiff's infringement claims. Throughout this exchange, Plaintiff has maintained that Giant has infringed the '184 Patent, and Giant has maintained that it does not infringe. Plaintiff also repeatedly threatened to file a lawsuit for infringement against Giant if Giant did not agree to a license. True and correct copies of examples of such letters between the parties are attached as Exhibit 2.

4. From May 2006 to October 2007, Giant did not receive any communications from Plaintiff regarding the '184 Patent. Then, on October 17, 2007, Plaintiff's counsel sent a letter to Giant's counsel again alleging infringement and threatening to file suit if Giant did not agree to a license. A true and correct copy of such letter is attached as Exhibit 3. Plaintiff did not disclose in this letter that the United States Patent and Trademark Office had granted a reexamination request regarding the '184 Patent on October 11, 2007. Plaintiff filed this action against Giant for infringement of the '184 Patent on November 6, 2007.

5. I understand that the Court has ordered that the parties and their counsel attend an Early Neutral Evaluation conference ("ENE") before the Court in San Diego, California, on January 28, 2008. The two persons with binding settlement authority for Giant, one of whom would

represent Giant at the ENE, are Max Loong, Giant's Chief Executive Officer, and Gary Yam, Giant's Controller. Mr. Loong and Mr. Yam both live in Hong Kong, China, so it would be very costly and time-consuming for either of them to travel to San Diego solely for the ENE.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: December 14, 2007

Elizabeth G. Borland

Sorensen v. Giant International (USA) Ltd.

USDC Case No. 07cv02121 BTM (CAB)

Certificate of Service

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served this 17th day of December, 2007, with a copy of this document via the Court's CM/ECF system. I certify that all parties in this case are represented by counsel who are CM/ECF participants. Any other counsel of record will be served by electronic mail, facsimile transmission, and/or first class mail on the following business day.

/s/ Allison H. Goddard

EXHIBIT 1
TO BORLAND DECLARATION

KALER LAW OFFICES

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SUITE 200
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J. Michael Kaler

michael@kalerlaw.com

Intellectual Property Litigation

October 21, 2004

Fax No. 678-904-6030

Mr. Frank Myers
President and CEO
Giant International, Ltd.
3500 Lenox Road, Suite 630
Atlanta, GA 30326
Phone: 678-904-6000

CONFIDENTIAL OFFER OF COMPROMISE SUBJECT TO FEDERAL RULES OF EVIDENCE § 408

RE: Giant International, Ltd.'s ("Giant") unauthorized usage of the technology taught in United States Patent No. 4,935,184

Dear Mr. Myers:

We have examined several Giant two-way radio products that incorporate plastic housings manufactured with plastics with different characteristics. From our examination, we have determined that the plastic housings of some of these products are substantially likely to be fabricated utilizing a process that infringes United States Patent No. 4,935,184 ("the '184 patent"), and we are continuing our investigations into other Giant products. Further, our records indicate that Giant is not currently licensed to utilize the '184 patented method.

I represent the Sorensen Research & Development Trust ("Trust"), the owner of the '184 patent entitled "Stabilized Injection Molding When Using a Common Mold Part With Separate Complimentary Mold Parts," issued on June 19, 1990. In addition to the '184 patent, the Trust is the owner of a number of patents issued to Jens Ole Sorensen, an inventor whose forty years in plastic injection molding have resulted in more than 65 United States patents and dozens of international patents. Mr. Sorensen has developed products and processes, which have been widely used in producing cassette

tapes, medical devices, automotive parts, food and beverage containers, and children's toys. Some of Mr. Sorensen's present endeavors include developing methods to enable production of hollow injection molded products with reduced wall thickness and improved dimensional control. Where applicable, the capacity to produce injection-molded products with reduced wall thickness allows for the use of less plastic in the manufacture and generally allows for faster production cycle times.

The '184 patent provides a long-sought elegant solution to a pervasive problem in the injection molding of hollow plastic products. The problem is that the highly pressurized injection of molten plastic forces the mold parts to move relative to each other. This mold movement problem causes misalignment of the mold parts and results in products with walls of undesirable thickness variations if not adequately controlled. Mr. Sorensen has invented a number of methods for mold stabilization that are applicable in different injection molding situations. For these inventions, Mr. Sorensen has been awarded several different patents recognized in the United States and other major industrial powers around the world.

The '184 patented method facilitates production of plastic components made with two or more plastic injections with different characteristics. The '184 patented technology provides an improved method for reducing mold misalignment during the injection molding process. This assists the manufacturer in producing parts with controlled dimensions fabricated within narrower tolerances. The improved dimensional control can be used to produce components with more refined fit and finish, improving the overall quality and appearance of the product. Moreover, the improved dimensional control can facilitate a reduction in material wasted and a reduction in manufacturing cycle time, both of which can be leveraged into reduced manufacturing cost.

The '184 patented method increases stabilization of the mold parts during injection molding of laminated plastic parts produced sequentially in two cavities made up of one common mold part and different complementary mold parts. The '184 patent teaches a method to stabilize the core during the second or later plastic injection by molding one or more stabilizing regions into the first plastic material component(s) that impede relative movement of the mold parts during the second or later injection. By providing this additional stabilization of the mold parts against movement during the injection process, hollow products may be produced having more controlled dimensions. Use of the '184 process offers significant benefit in the manufacture of two-plastic plastic housings and similar products.

The following table lists Giant products that our inspection show to be substantially likely to have been produced through the use of a process which infringes

the '184 patent (hereinafter, "Accused Products"). This list is not intended to be exhaustive, rather it indicates Accused Products that we have discovered and examined, but our investigation into additional Accused Products continues:

ACCUSED PRODUCT
Motorola Talkabout Two-Way Radio T6500
Motorola Talkabout Two-Way Radio T6550
Motorola Talkabout Two-Way Radio T5920/5950
Motorola Talkabout Two-Way Radio T5550
Motorola Talkabout Two-Way Radio T4900

My client is prepared to discuss reasonable terms for a license that would allow Giant to continue to practice the '184 process in the manufacture of its products. Giant must obtain a license under the '184 patent in order to continue importing into, manufacturing, offering for sale and/or selling the Accused Products within the United States. This requirement extends to any additional infringing Giant products that we have not yet identified. Giant has a legal duty to avoid infringement of United States patents. Giant's manufacture of its plastic housings outside the United States does not avoid infringement liability when those infringing products are imported into the United States.

I have enclosed for your convenience, two (2) sets of D-size drawing number D-5429 prepared by my client. We are providing these drawings as exemplars of the Accused Products that illustrate our infringement analysis. The top view (Fig. 1) of each drawing shows the Accused Product with an exemplary section line 4-4 through the product. The sectional view shown in Fig. 4 is taken along section line 4-4 and corresponds to Fig. 2B of the '184 patent. Fig. 4 illustrates where each element of the patent claims appears in the Accused Product. A comparison of Fig. 4 and Figure 2B of the '184 patent (illustrated at the bottom-left of the drawing) demonstrates that the claimed limitations of the '184 patent are present in the Accused Products in the same manner as in a preferred embodiment of the patent. Both figures show a cross-section of the molds with the hollow products having a closed end and an open end positioned in the mold cavity formed between a first common mold part (10) and second complementary mold part (26). The products have laminated walls (38) that extend to

the rim of the products and consist of plastics having different characteristics. Additionally, each product has a portion of the first plastic material component (20) which functions as a stabilizing region (30) to impede the relative movement of the mold parts during the second injection.

Giant's use of the '184 patented technology is further substantiated by the enclosed claim charts associated with the attached drawings. The claim charts compare the illustrated Accused Product to claim number one (1) of the '184 patent. The first column of the claim chart quotes the text of the claim. The second column provides commentary pointing out the corresponding structure or element of the Accused Product. The third column is a remark reference number. Finally, the fourth column identifies one or more reference figures from the accompanying drawing showing the particular aspect that is the subject of the remark. The chart rows are broken down by convenience to the commentary text. For your convenient reference, a copy of the '184 patent is enclosed.

It may be possible, although not substantially likely, that Giant manufactures some of the Accused Products in a manner such that production does not infringe the '184 patented process. In order that we may quickly resolve this issue, please provide the following information:

1. Verify whether the two mold cavities used to fabricate the external plastic plastic housing of each Accused Product share a common mold part.

2. Verify whether the portion of the plastic housing identified in the attached drawings as "FIRST PLASTIC MATERIAL COMPONENT 20" is fabricated with injection into the firstly-filled mold cavity used to produce the Accused Product.

3. Verify whether the portion of the plastic housing identified in the attached drawings as "SECOND PLASTIC MATERIAL COMPONENT 32" is fabricated with injection into the secondly-filled mold cavity used to produce the Accused Product.

4. In the alternative, provide a complete set of "as-built" mold drawings for the plastic plastic housing of each Accused Product.

PLEASE BE ADVISED THAT THE FOREGOING IS A REQUEST UNDER THE UNITED STATES PROCESS PATENT AMENDMENTS ACT OF 1988, AND MORE SPECIFICALLY WITH REFERENCE TO 35 UNITED STATES CODE § 295, SEEKING

FACTUAL INFORMATION NECESSARY TO VERIFY THAT PRODUCTS MADE, SOLD, IMPORTED INTO, OR USED IN THE UNITED STATES ARE MADE BY A PROCESS PATENTED IN THE UNITED STATES.

The United States Process Patent Amendments Act of 1988 ("PPAA") provides at 35 U.S.C. § 295 as follows:

> **Sec. 295. Presumption: Product made by patented process**
>
> In actions alleging infringement of a process patent based on the importation, sale, offer for sale, or use of a product which is made from a process patented in the United States, if the court finds—
>
> (1) that a substantial likelihood exists that the product was made by the patented process, and
>
> (2) that the plaintiff has made a reasonable effort to determine the process actually used in the production of the product and was unable to so determine,
>
> the product shall be presumed to have been so made, and the burden of establishing that the product was not made by the process shall be on the party asserting that it was not so made.

If Giant asserts that any Accused Product is not made with two mold cavities sharing one common mold part, or that any of the statements 1 through 3, hereinabove, is not correct for any Accused Product, please immediately notify me with the correct information and documentation to substantiate Giant's contention. In the absence of such countervailing evidence, our analysis leads us to the conviction that Giant is making unauthorized use of the '184 patented technology in the manufacture of each Accused Product.

Please provide the information requested no later than November 1, 2004. This provides Giant with more than a reasonable amount of time to collect the required information. My client and I are prepared to hold such information in confidence, and to sign a suitable confidentiality agreement to that end.

Be advised that this constitutes a notice of patent infringement in violation of 35 U.S.C. § 271. Should Giant fail to diligently investigate this matter upon receipt of this notice, it will be considered a breach of Giant's affirmative duty to investigate allegations

of patent infringement as provided in 35 U.S.C. § 287. Such breach of the duty to investigate is evidence of willful infringement of the '184 patent, which finding can support enhancement of damages awarded pursuant to 35 U.S.C. § 284.

We recognize that Giant contracts out the fabrication of many components of its tools to manufacturing agents. However, Giant is ultimately responsible for the infringement of the '184 patent in making, importing, offering for sale or selling its tools and components. Giant's liability holds regardless of whether it makes these parts itself or through a third-party. Neither production of the Accused Products through manufacturing agents, nor production of the Accused Products outside of the United States excuses Giant's liability for infringement of the '184 patent. Title 35, section 271 of the United States Code provides that:

> (a) Except as otherwise provided in this title, whoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.

Moreover, with regard to patented processes, section 271 provides:

> (g) Whoever without authority imports into the United States or offers to sell, sells, or uses within the United States a product which is made by a process patented in the United States shall be liable as an infringer, if the importation, offer to sell, sale, or use of the product occurs during the term of such process patent.

My client has no interest in the policing problems that are inherent in licensing contracted parts fabricators. Giant is the party that offers to sell and sells these products in the United States. Therefore, Giant is liable as an infringer for those products which infringe United States patents, including the '184 patent.

While our infringement and licensing discussions will be with Giant, we will consider any evidence of non-infringement that is produced by Giant or its manufacturing agents. If Giant possesses evidence showing that any Accused Product is not actually made by an infringing process, providing that evidence to us immediately would greatly simplify matters. My client is prepared to withdraw the assertion of infringement with respect to any product for which we are provided sufficient proof demonstrating that the process actually used to make the product does not infringe the '184 patent.

In the interest of obtaining an amicable and rapid resolution of this matter, my client has authorized me to offer a fully paid-up license and release for all Giant's past and future use of the '184 patented technology in exchange for the sum of US$200,000. (Two Hundred Thousand U.S. Dollars). This offer expires by its own terms on November 1, 2004.

Your anticipated courtesy in working with us toward a rapid and amicable resolution of this matter is greatly appreciated.

Cordially,

J. Michael Kaler

Encl: Drawing No. D-5429
Claim Chart for Drawing No. D-5429
U.S. Patent No. 4,935,184

United States Patent [19]

Sorensen

[11] Patent Number: 4,935,184

[45] Date of Patent: Jun. 19, 1990

[54] STABILIZED INJECTION MOLDING WHEN USING A COMMON MOLD PART WITH SEPARATE COMPLIMENTARY MOLD PARTS

[75] Inventor: Jens O. Sorensen, Rancho Santa Fe, Calif.

[73] Assignee: Primtec, Rancho Santa Fe, Calif.

[21] Appl. No.: 386,012

[22] Filed: Jul. 27, 1989

Related U.S. Application Data

[63] Continuation of Ser. No. 152,670, Feb. 5, 1988, abandoned.

[51] Int. Cl.[5] B29C 45/16

[52] U.S. Cl. 264/246; 264/255; 264/328.8; 425/129.1

[58] Field of Search 264/245, 246, 255, 328.1, 264/328.8, 328.11, 328.12; 425/127, 129.1, 130

[56] References Cited

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17577 1/1972 Australia .

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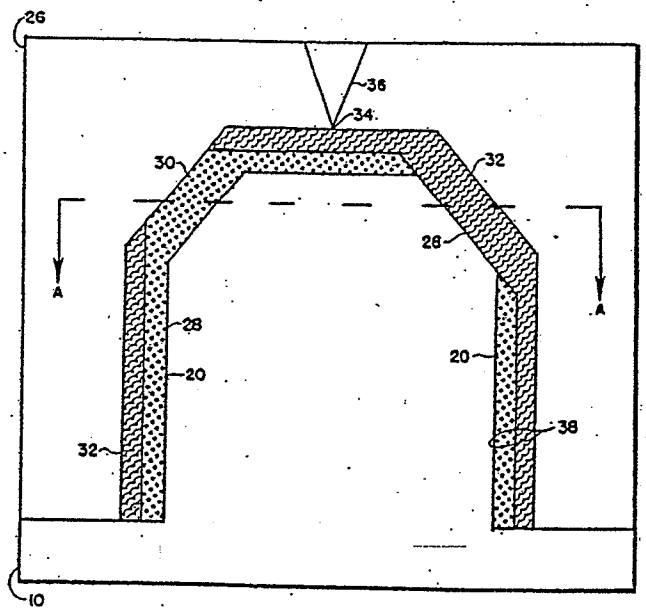
Promat 100–100/100, Nestal.

Primary Examiner—Jill L. Heitbrink
Attorney, Agent, or Firm—Edward W. Callan

[57] ABSTRACT

A process for injection molding plastic products having a closed end and an open end with laminated walls terminating in a rim at the open end. A first common mold part is combined with a first complementary mold part to assemble a first mold cavity in which the first plastic material is injected until it reaches the portion of the first mold cavity that defines the rim of the product. Portions of the first complementary mold part contact portions of the first common mold part to rigidly secure the mold parts in position in relation to each other in order to impede movement of the mold parts in relation to each other during injection of a first plastic material into the first mold cavity. The first plastic material is shaped such that when it is contained after solidification in a second mold cavity it provides one or more stabilizing regions that rigidly secure the first common mold part in position in relation to the second complementary mold part in order to impede movement of such mold parts in relation to each other during the injection of a second plastic material into the second mold cavity. A second plastic material having different characteristics than the first plastic material is injected until it reaches the portion of the second mold cavity that defines the rim of the product to form a laminated wall.

10 Claims, 5 Drawing Sheets



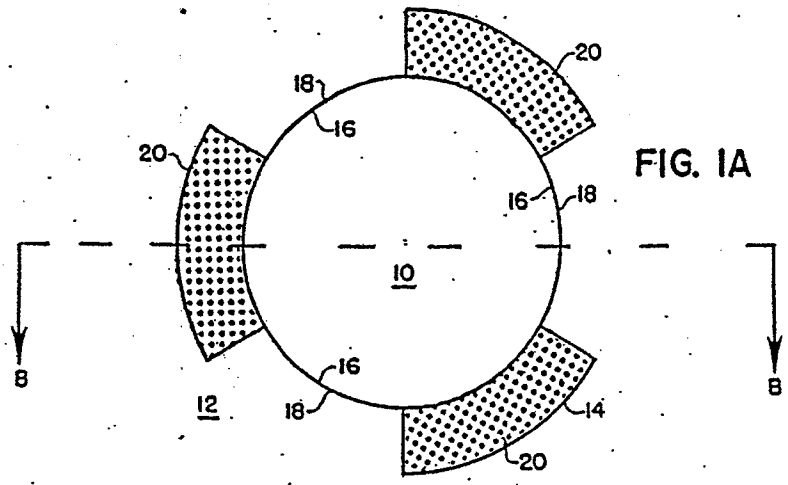
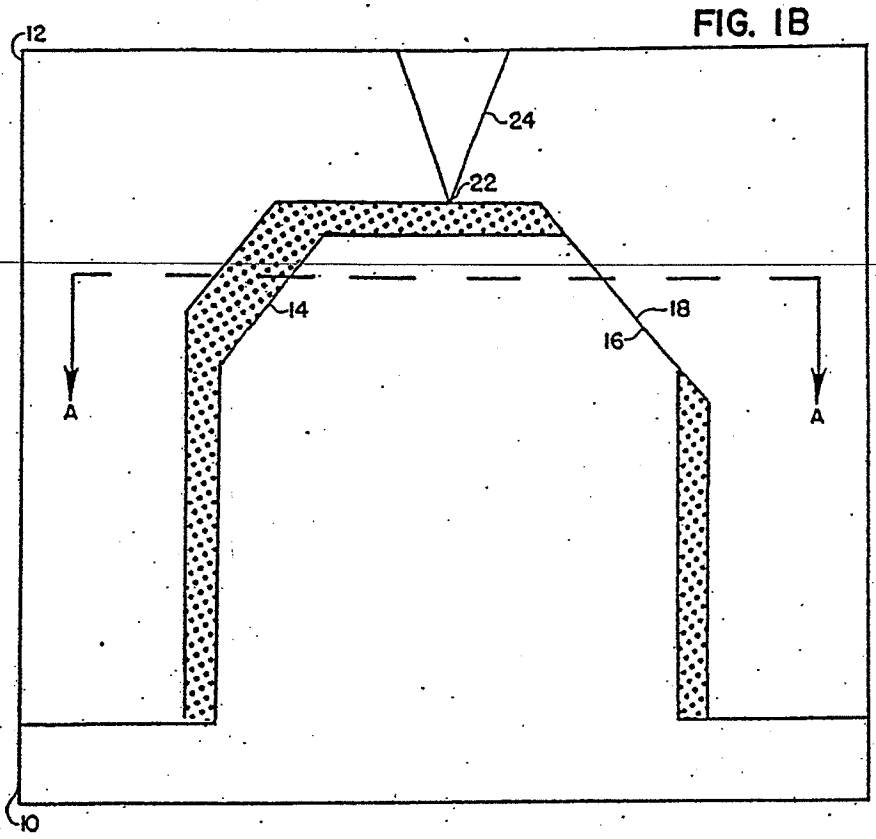


FIG. 1A

FIG. 1B



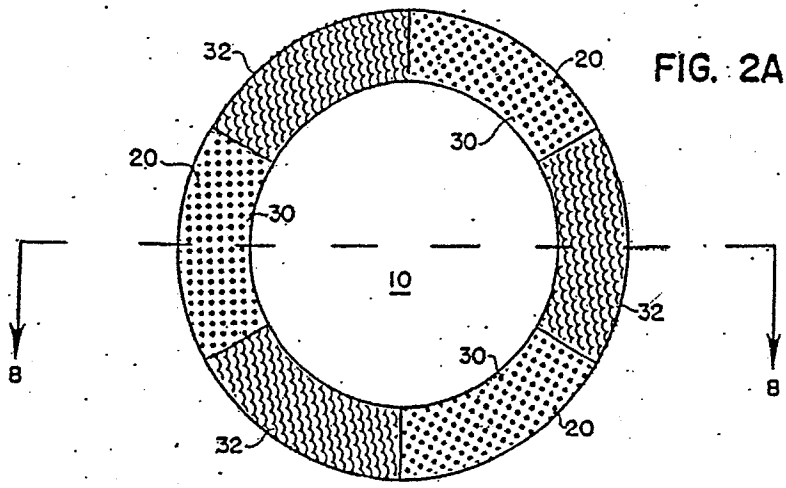


FIG. 2A

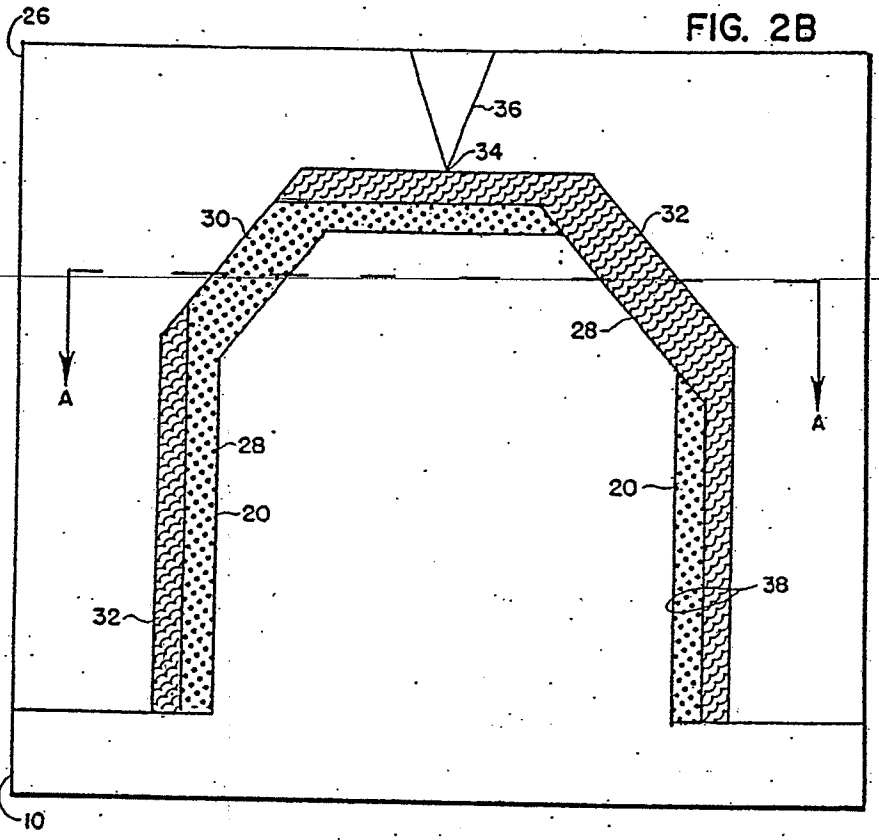


FIG. 2B

FIG. 3B

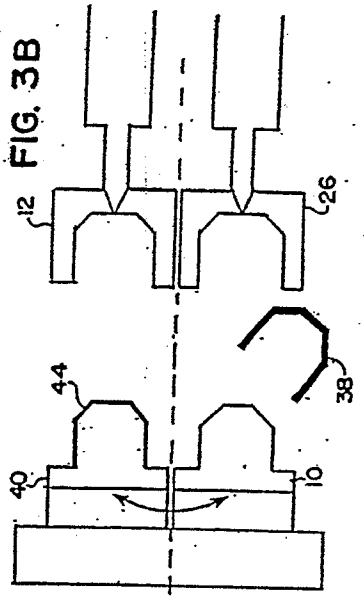


FIG. 3D

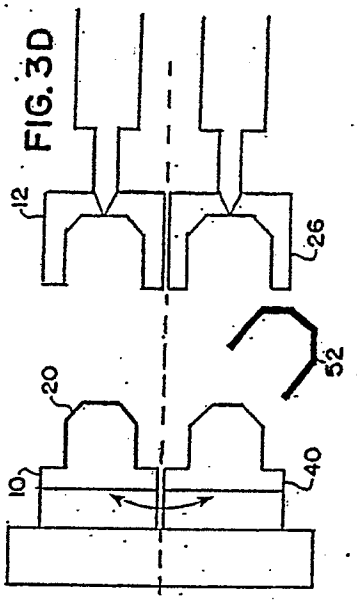


FIG. 3A

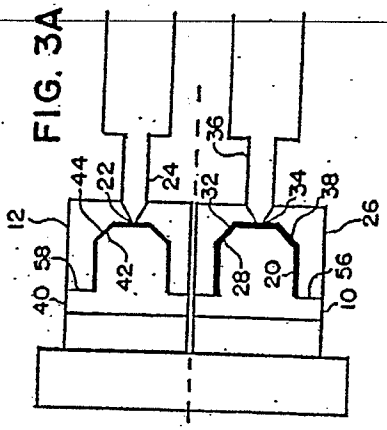


FIG. 3C

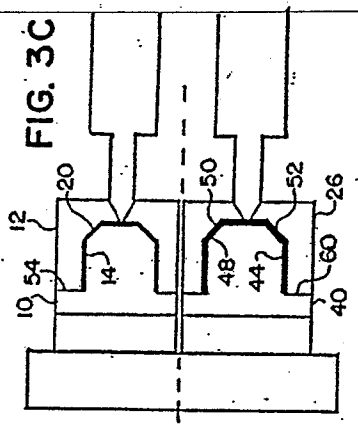


FIG. 4

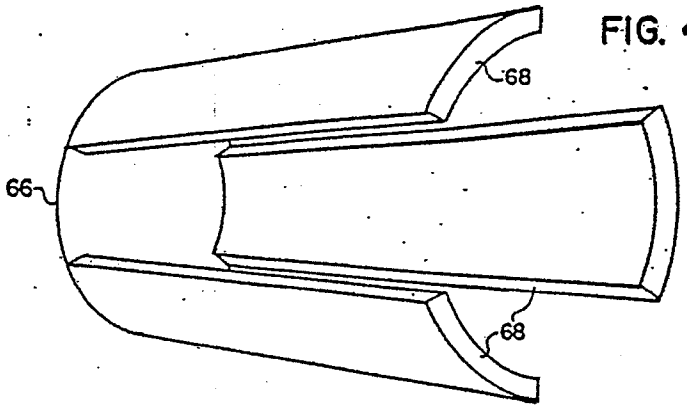


FIG. 5

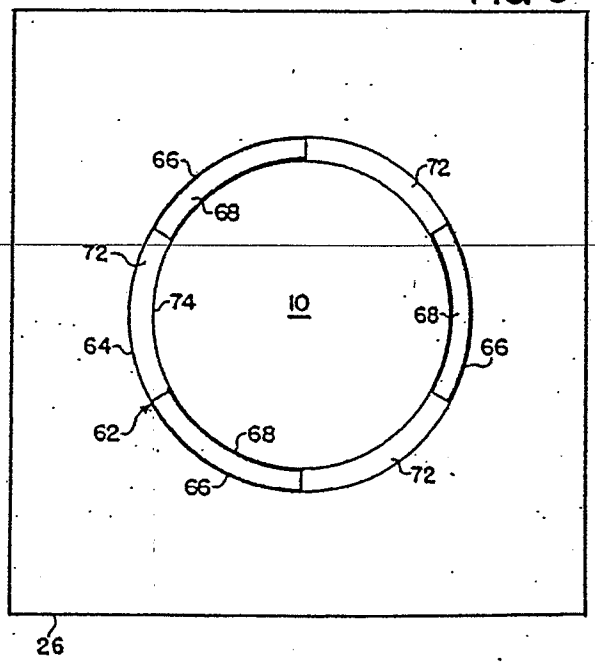


FIG. 6

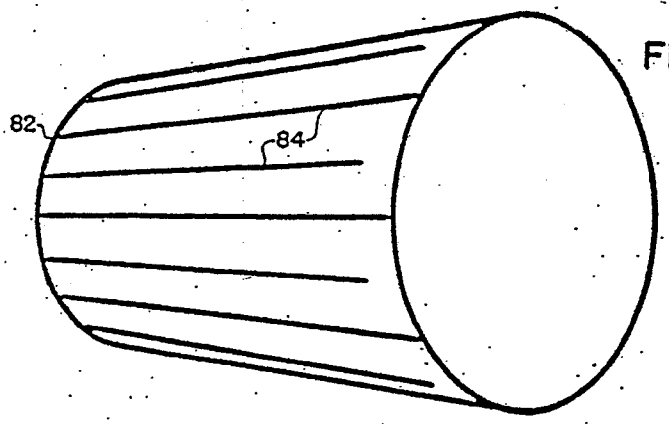
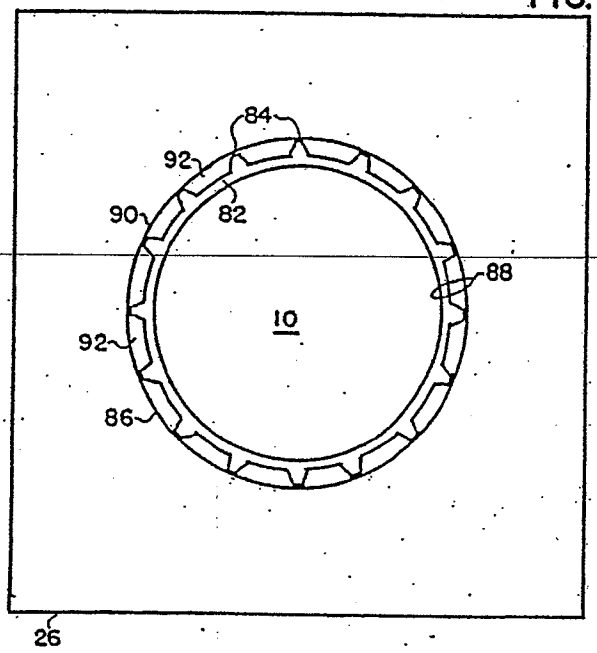


FIG. 7



STABILIZED INJECTION MOLDING WHEN USING A COMMON MOLD PART WITH SEPARATE COMPLIMENTARY MOLD PARTS

This is a continuation of co-pending application Ser. No. 07/152,670 filed on Feb. 5, 1988 now abandoned.

BACKGROUND OF THE INVENTION

The present invention generally pertains to injection molding of plastic products and is particularly directed to stabilizing the dimensions of mold cavities during the injection steps when using a common mold part and at least two complementary mold parts to assemble separate mold cavities for receiving separate injections of plastic materials to produce a thin-walled, hollow plastic product.

The use of a common mold part with at least two complementary mold parts to provide separate mold cavities for receiving separate injections of plastic materials for producing a hollow plastic product is known. In one known prior art method of cyclic injection molding a hollow plastic product, a first mold cavity is defined by a first common mold part and a first complementary mold part; and a second mold cavity is defined by the first common mold part and a second complementary mold part. The method includes the steps of:

(a) combining the first common mold part with the first complementary mold part to assemble the first mold cavity;

(b) injecting a first plastic material into the first mold cavity;

(c) solidifying the injected first plastic material to form a first plastic material component;

(d) combining the first common mold part with the second complementary mold part to assemble the second mold cavity with the first plastic material component attached to the first common mold part so that when the second mold cavity is assembled the first plastic material component is contained within the second mold cavity;

(e) injecting a second plastic material into the second mold cavity while the first plastic material component is contained therein; and

(f) solidifying the injected second plastic material so as to form a second plastic material component that fuses with the first plastic material component to produce a hollow plastic product.

It also is known to expand upon this method by further using a third mold cavity defined by a second common mold part and the first complementary mold part, and a fourth mold cavity defined by the second common mold part and the second complementary mold part. The method further includes the steps of:

(h) during step (d), combining the second common mold part with the first complementary mold part to assemble the third mold cavity;

(i) during step (e), injecting a third plastic material into the third mold cavity;

(j) during step (f), solidifying the injected third plastic material to form a third plastic material component;

(k) during step (a), combining the second common mold part with the second complementary mold part to assemble the fourth mold cavity with the third plastic material attached to the second common mold part so that when the fourth mold cavity is assembled the third plastic material is contained within the fourth mold cavity;

(l) during step (b), injecting the fourth plastic material into the fourth mold cavity while the solidified third plastic material is contained therein; and

(m) during step (c), solidifying the injected fourth plastic material so as to form a fourth plastic material component that fuses with the third plastic material to produce a second said hollow plastic product.

This method has been used for producing hollow plastic products having composite walls of separately injected plastic materials. In performing such method, the first plastic material is injected until it reaches the parting line between the first common mold part and the first complementary mold part; the second plastic material is injected until it reaches the parting line between the first common mold part and the second complementary mold part; the third plastic material is injected until it reaches the parting line between the second common mold part and the first complementary mold part; and the fourth plastic material is injected until it reaches the parting line between the second common mold part and the second complementary mold part.

Typically, all four plastic materials are the same.

SUMMARY OF THE INVENTION

The present invention provides a method and apparatus for injecting molding hollow, thin-walled plastic products, having a closed end and an open end with laminated walls terminating in a rim at the open end, where relative movement between the common mold part and the complementary mold parts is impeded during injection of the plastic materials.

According to the present invention, the first and second plastic materials have different characteristics, and in the injection molding method described above, the step of solidifying the injected first plastic material to form the first plastic material component (step (c)) includes the step of

(g) shaping the first plastic material component such that when the first plastic material component is so contained in the second mold cavity the first plastic material component provides one or more stabilizing regions that rigidly secure the first common mold part in position in relation to the second complementary mold part in order to impede movement of the first common mold part in relation to the second complementary mold part during the injection of the second plastic material into the second mold cavity, to thereby produce a thin-walled plastic product having controlled dimension in that the wall-thickness dimensions of the second mold cavity are stabilized by the stabilizing regions.

The step of injecting the first plastic material into the first mold cavity (step (b)) includes the step of

(h) injecting the first plastic material until it reaches the portion of the first mold cavity that defines the rim of the product; and

the step of injecting the second plastic material into the second mold cavity (step (e)) includes the step of

(i) injecting the second plastic material until it reaches the portion of the second mold cavity that defines the rim of the product.

When the method of the present invention utilizes two common mold cavities, such as described above, the step of solidifying the injected third plastic material to form the third plastic material component (step (j)) includes the step of shaping the third plastic material component such that when the third plastic material

component is so contained in the fourth mold cavity the solidified third plastic material provides one or more stabilizing regions that rigidly secure the second common mold part in position in relation to the second complementary mold part in order to impede movement of the second common mold part in relation to the second complementary mold part during the injection of the fourth plastic material into the fourth mold cavity, to thereby produce a second thin-walled plastic product having controlled dimensions.

The method of the present invention may also be used for molding a product having a side wall including an approximately longitudinal strip that may be transparent to provide a transparent window in the side wall. This feature is particularly advantageous when it is desired to provide a longitudinal window in the side wall in order to monitor the level of a substance, such as a fluid, contained in the plastic product. In one embodiment, the first plastic material component is shaped to provide at least one stabilizing region that is transverse to a parting line between the first common mold part and the first complementary mold part, whereby the longitudinal strip is defined by the transverse stabilizing region. A transparent window is provided in the side wall by injecting a transparent first plastic material into the first mold cavity. A nontransparent second plastic material is injected into the second mold cavity to provide a nontransparent background for printing in the remainder of the side wall. In an alternative embodiment, the first plastic material component is shaped such that when the first plastic material component is contained in the second mold cavity, the second mold cavity defines at least one unfilled cavity region that is transverse to a parting line between the first common mold part and the second complementary mold part, whereby the longitudinal strip is defined by the unfilled transverse cavity region. In this embodiment, a transparent window is provided in the side wall by injecting a transparent second plastic material into the second mold cavity; and a nontransparent first plastic material is injected into the first mold cavity to provide a nontransparent background for printing in the remainder of the side wall.

In another aspect of the method of the present invention, the step of shaping the first plastic material component (step (g)) may further include the step of providing a first complementary mold part that is dimensioned in relation to the first common mold part such that when combined with the first common mold part to assemble the first mold cavity, portions of the first complementary mold part contact portions of the first common mold part to rigidly secure the first common mold part in position in relation to the first complementary mold part in order to impede movement of the first common mold part in relation to the first complementary mold part during the injection of the first plastic material into the first mold cavity.

The present invention further provides apparatus for performing the method of the present invention and hollow, thin-walled plastic products molded according to the method of the present invention.

Additional features of the present invention are described in relation to the description of the preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWING

FIGS. 1A and 1B are sectional views illustrating a first mold cavity assembled by combining a first common mold part with a first complementary mold part. FIG. 1A is a top sectional view taken along lines A—A in FIG. 1B; and FIG. 1B is a side sectional view taken along lines B—B in FIG. 1A. FIGS. 1A and 1B further show the first plastic material injected into the first mold cavity.

FIGS. 2A and 2B are sectional views illustrating a second mold cavity assembled by combining the first common mold part of FIGS. 1A and 1B with a second complementary mold part. FIG. 2A is a top sectional view taken along lines A—A in FIG. 2B; and FIG. 2B is a side sectional view taken along lines B—B in FIG. 2A. FIGS. 2A and 2B further show the first plastic material component contained in the second mold cavity and the second plastic material injected into the second mold cavity.

FIGS. 3A through 3D illustrate a series of steps in the performance of a preferred embodiment of the method of the present invention.

FIG. 4 illustrates a first plastic material component formed in an alternative embodiment of the method of the present invention.

FIG. 5 is a sectional view illustrating a second mold cavity containing the first plastic material component of FIG. 4. FIG. 5 also is a sectional view illustrating a product molded according to such alternative embodiment of the method of the present invention.

FIG. 6 illustrates a first plastic material component formed in a further alternative embodiment of the method of the present invention.

FIG. 7 is a sectional view illustrating a second mold cavity containing the first plastic material component of FIG. 6. FIG. 7 also provides a sectional view of a product molded according to such further alternative embodiment of the method of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to FIGS. 1A and 1B the apparatus of a preferred embodiment of the present invention includes a first common mold part 10 and first complementary mold part 12. The first common mold part 10 is combined with the first complementary mold part 12 to assemble a first mold cavity 14. The first complementary mold part 12 is dimensioned in relation to the first common mold part 10 such that when so combined with the first common mold part 10 to assemble the first mold cavity 14, portions 16 of the first complementary mold part 12 contact portions 18 of the first common mold part 10 to rigidly secure the first common mold part 10 in position in relation to the first complementary mold part 12 in order to impede movement of the first common mold part 10 in relation to the first complementary mold part 12 during injection of the first plastic material 20 into the first mold cavity 14. The first plastic material 20 is injected into the mold cavity 14 through a gate 22 and a runner 24 in the first complementary mold part 12.

The injected first plastic material 20 is solidified to form a first plastic material component 20 by cooling the injected first plastic material in the first mold cavity 14, whereby the first plastic material component 20 is shaped in accordance with the dimensions of the first mold cavity 14. In an alternative embodiment, the first plastic material component may be further shaped following removal of the first complementary mold part 12.

Referring to FIGS. 2A and 2B the apparatus of a preferred embodiment of the present invention includes a second complementary mold part 26. The first common mold part 10 is combined with the second complementary mold part 26 to assemble a second mold cavity 28 with the first plastic material component 20 attached to the first common mold part 10, so that when the second mold cavity 28 is assembled, the first plastic material component 20 is contained within the second mold cavity 28.

The first plastic material component 20 is shaped such that when the first plastic material component 20 is so contained in the second mold cavity 28 the first plastic material component 20 provides one or more stabilizing regions 30 that rigidly secure the first common mold part 10 in position in relation to the second complementary mold part 26 in order to impede movement of the first common mold part 10 in relation to the second complementary mold part 26 during the insertion of a second plastic material 32 into the second mold cavity 28.

The second plastic material 32 is injected into the second mold cavity 28 through a gate 34 and a runner 36 in the second complementary mold part 26 while the first plastic material component 20 is contained in the second mold cavity 28.

The injected second plastic material 32 is solidified by cooling in the second mold cavity 28 so as to form a second plastic material component 32 that fuses with the first plastic material component 20 to produce thin-walled hollow plastic product 38 having controlled dimensions.

A preferred embodiment of a method of cyclic injection molding of hollow, thin-walled plastic products according to the present invention, utilizing two common mold parts and two complementary mold parts to provide four mold cavities is described with reference to FIGS. 3A through 3D.

Referring to FIG. 3A, a second common mold part 40 is combined with the first complementary mold part 12 to assemble a third mold cavity 42; while at the same time the first common mold part 10 is combined with the second complementary mold part 26 to assemble a second mold cavity 28, with the first plastic material component 18 attached to the first common mold part 10, so that when the second mold cavity 28 is assembled, the first plastic material component 20 is contained within the second mold cavity 28. The formation of the first plastic material component 20 is discussed above in relation to FIGS. 1A and 1B.

A third plastic material 44, which may be the same as the first plastic material 20, is injected into the third mold cavity 42 through the gate 22 and the runner system 24 contained in the first complementary mold part 12; while at the same time, the second plastic material 32 is injected into the second mold cavity 28 through the gate 34 and a runner system 36 contained in the second complementary mold part 26.

The injected third plastic material 44 is solidified by cooling in the third mold cavity 42 to form a third plastic material component 44; while at the same time the injected second plastic material 32 is solidified by cooling in the second mold cavity 28 so as to form the second plastic material component 28 that fuses with the first plastic material component 20 to produce the hollow, thin-walled plastic product 38.

Referring to FIG. 3B, the first common mold part 10 and the second common mold part 40 are separated from the second complementary mold part 26 and the first complementary mold part 12 respectively; and the molded hollow, thin-walled plastic product 38 is ejected from first common mold part 10, while the third plastic material component 44 is retained on the third common mold part 40. The positions of the first common mold part 10 and the second common mold part 40 are then interchanged from those shown in FIG. 3B to those shown in FIG. 3C.

Referring to FIG. 3C, the first common mold part 10 is combined with the first complementary mold part 12 to assemble the first mold cavity 14; while at the same time the second common mold part 40 is combined with the second complementary mold part 26 to assemble a fourth mold cavity 48, with the first plastic material component 44 attached to the third common mold part 40, so that when the fourth mold cavity 48 is assembled, the third plastic material component 44 is contained within the fourth mold cavity 48. The formation of the third plastic material component 44 is discussed above in relation to FIG. 3A.

The first plastic material 20, which may be the same as the third plastic material 44, is injected into the first mold cavity 14 through the gate 22 and the runner system 24 contained in the first complementary mold part 12; while at the same time, a fourth plastic material 50, which may be identical to the second plastic material 32, is injected into the fourth mold cavity 48 through the gate 34 and a runner system 36 contained in the second complementary mold part 26.

The injected first plastic material 20 is solidified by cooling in the first mold cavity 14 to form another first plastic material component 20; while at the same time the injected fourth plastic material 50 is solidified by cooling in the fourth mold cavity 48 so as to form the second plastic material component 48 that fuses with the third plastic material component 44 to produce a second hollow, thin-walled plastic product 52.

Referring to FIG. 3D, the first common mold part 10 and the second common mold part 40 are separated from the first complementary mold part 12 and the second complementary mold part 26 respectively; and the second molded hollow, thin-walled plastic product 52 is ejected from second common mold part 40, while the first plastic material component 20 is retained on the first common mold part 10. The positions of the first common mold part 10 and the second common mold part 40 are then interchanged from those shown in FIG. 3D to those shown in FIG. 3A, and the cycle is repeated.

As described above, the first plastic material component 20 is shaped such that when the first plastic material component 20 is contained in the second mold cavity 28, the first plastic material component 20 provides one or more stabilizing regions 30 that rigidly secure the first common mold part 20 in position in relation to the second complementary mold part 26 in order to impede movement of the first common mold part 10 in relation to the second complementary mold part 26 during injection of the second plastic material 32 into the second mold cavity 28.

Likewise, the third plastic material component 44 is shaped such that when the third plastic material component 44 is contained in the fourth mold cavity 48, the third plastic material component 44 provides one or more stabilizing regions that rigidly secure the second common mold part 40 in position in relation to the second complementary mold part 26 in order to impede

movement of the second common mold part 40 in relation to the second complementary mold part 26 during injection of the fourth plastic material 50 into the fourth mold cavity 48.

The method described above with reference to FIGS. 3A through 3D may be used for producing hollow, thin-walled plastic products having laminated walls of different plastic materials. In performing such method, the first plastic material 20 is injected until it reaches a parting line 54 between the first common mold part 10 and the first complementary mold part 12 (FIG. 3C); and the second plastic material 32 is injected until it reaches a parting line 56 between the first common mold part 10 and the second complementary mold part 26 (FIG. 3A). Likewise, the third plastic material 44 is injected until it reaches a parting line 58 between the second common mold part 40 and the first complementary mold part (FIG. 3A); and the fourth plastic material 50 is injected until it reaches a parting line 60 between the second common mold part 40 and the second complementary mold part 26.

Referring to FIGS. 4 and 5, the method of the present invention also may be used for molding a product 62 having a side wall 64 including at least one approximately longitudinal strip that may be transparent to thereby provide a transparent window in the side wall 64.

In one embodiment, the first plastic material component 66 is shaped to provide at least one stabilizing region 68 that is transverse to a parting line 54 (FIG. 3C) between the first common mold part 10 and the first complementary mold part 12, whereby each longitudinal strip is defined by a transverse stabilizing region 68. The stabilizing regions 68 need not extend all the way to the parting line 54. A transparent window is provided in the side wall 64 by injecting a transparent first plastic material into the first mold cavity to provide the first plastic material component 66. A nontransparent second plastic material 72 is injected into the second mold cavity 74 to provide a nontransparent background for printing in the remainder of the side wall 64.

In an alternative embodiment, the first plastic material component 66 is shaped such that when the first plastic material component 66 is contained in the second mold cavity 74, the second mold cavity 74 defines at least one unfilled cavity region 72 that is transverse to a parting line 56 (FIG. 3A) between the first common mold part 10 and the second complementary mold part 26, whereby longitudinal strips may be provided in the unfilled transverse cavity regions 72. The unfilled transverse cavity regions 72 need not extend all the way to the parting line 56. In this embodiment, transparent windows are defined in the side wall 64 by injecting a transparent second plastic material into the second mold cavity 74 to fill the transverse cavity regions 72. Prior thereto, a nontransparent first plastic material is injected into the first mold cavity to form the first plastic material component 66 and thereby provide a nontransparent background for printing in the remainder of the side wall 64.

Referring to FIGS. 6 and 7, in a further preferred embodiment, the first plastic material component 82 that is shaped as shown in FIG. 6 to include a plurality of symmetrically disposed stabilizing regions 84, which extend approximately longitudinally over a portion of the side wall 86 of the molded product 88. The first plastic material component 82 is molded in a first mold cavity in accordance with the teaching of applicant's U.S. Pat. application No. 7,463, filed Jan. 26, 1987 and in accordance of the above description to the extent that such description is compatible with the teaching of application Ser. No. 7,463. After the first plastic material component 82 is formed in a first mold cavity, which is assembled by combining a first complementary mold part 12 and a first common mold part 10, the first plastic component 82 is retained on the first common mold part 10 while the first common mold part 10 is combined with a second complementary mold part 26 to assemble a second mold cavity 90, as shown in FIG. 7.

Referring to FIG. 7, the first plastic material component 82 is shaped such that when the first plastic material component 82 is contained in the second mold cavity 90, the first plastic material component 82 provides one or more stabilizing regions 84 that rigidly secure the first common mold part 10 in position in relation to the second complementary mold part 26 in order to impede movement of the first common mold part 10 in relation to the second complementary mold part 26 during injection of the second plastic material 92 into the second mold cavity 90.

The injected second plastic material 92 is solidified by cooling in the second mold cavity 90 to form a second plastic material component 92 that fuses with the first plastic material component 82 to produce the hollow, thin-walled, plastic product 88. The side wall 86 of the molded product 88 thus includes two layers of plastic 82, 92. The molded product 88 has controlled dimensions, is generally shaped as shown in FIG. 6, and has a lateral cross section as shown in FIG. 7. The side wall 86 of the molded product thus includes two layers of plastic 82, 92.

The stabilizing regions 84 have a wall thickness equal to the thickness of the side wall 86 and are transverse to the parting line 56 (FIG. 3A) between the first common mold part 10 and the second complementary mold part 26 to thereby provide longitudinal transparent windows 84 in the side wall 86. The stabilizing regions 84 need not extend all the way to the parting line 56. In a preferred embodiment of this product, the other side-wall layer 90 is nontransparent and extends throughout the majority of the side wall 86.

The present invention may be modified from the embodiments illustrated and described above. The common mold parts may be cavity mold parts instead of core mold parts, as illustrated and described herein. In addition, injections of plastic material into any given mold cavity may be made through more than one gate. Also, injections of plastic materials may be made into more than two mold cavities simultaneously, whereby the number of mold cavities included in the mold may be a multiple of the number of separate mold cavities required to produce a single product. For example, when using the method described and illustrated herein for producing a product composed of two plastic material components formed following injection of plastic material into two separate mold cavities, the number of mold cavities included in the mold may be any multiple of two, i.e. 2, 4, 6, etc.

The present invention also can be used to mold products including more than two plastic material components formed following injection of plastic material into more than two separate mold cavities. In an embodiment requiring three separate mold cavities, a third complementary mold part is used, and the fused first and second plastic material components are retained on

the first common mold part when the first common mold part is combined with the third complementary mold part to assemble the third mold cavity, with the fused-first-and-second-mold-parts being shaped to stabilize the common mold in relation to the third complementary mold part during injection of a third plastic material into the third mold cavity.

The core-stabilization techniques described in applicant's U.S. Pat. Nos. 4,381,275 and 4,508,676; U.S. Pat. No. 3,737,272 to Stegmuller; and in Australian Patent Specification 17,577/70 filed by Ryles and published Jan. 20, 1972 may be used to stabilize the common mold part in relation to the first complementary mold part during the injection of the first plastic material in lieu of the technique described above with relation to FIGS. 1A and 1B.

The first and second plastic materials may be either the same material or different materials. It is sometimes advantageous to use first and second plastic materials having different physical characteristics. For example, the present invention is ideally suited for molding a hollow, thin-walled plastic product in which the side wall must provide both a moisture barrier and a gas (such as Oxygen) barrier. To mold such a product, a plastic material having a desirable moisture-barrier characteristic is selected as one of the injected plastic materials; and a plastic material having a desirable gas-barrier characteristic is selected as the other injected plastic material.

I claim:

1. A method of cyclic injection molding a thin-walled hollow, plastic product having a closed end and an open end with laminated walls terminating in a rim at the open end, utilizing a first mold cavity and a second mold cavity, the first mold cavity being defined by a first common mold part and a first complementary mold part, and the second mold cavity being defined by the first common mold part and a second complementary mold part, the method comprising the steps of

(a) combining the first common mold part with the first complementary mold part to assemble the first mold cavity;

(b) injecting a first plastic material into the first mold cavity;

(c) solidifying the injected first plastic material to form a first plastic material component;

(d) combining the first common mold part with the second complementary mold part to assemble the second mold cavity with the first plastic material component attached to the first common mold part so that when the second mold cavity is assembled the first plastic material component is contained within the second mold cavity;

(e) injecting a second plastic material having different characteristics than the first plastic material into the second mold cavity while the first plastic material component is contained therein; and

(f) solidifying the injected second plastic material so as to form a second plastic material component that fuses with the first plastic material component to produce a hollow plastic product;

wherein step (c) comprises the step of

(g) shaping the first plastic material component such that when the first plastic material component is so contained in the second mold cavity the first plastic material component provides one or more stabilizing regions that rigidly secure the first common mold part in position in relation to the second complementary mold part in order to impede movement of the first common mold part in relation to the second complementary mold part during step (e), to thereby produce a thin-walled plastic product having controlled dimensions;

wherein step (b) comprises the step of

(h) injecting the first plastic material until it reaches the portion of the first mold cavity that defines the rim of the product; and

wherein step (e) comprises the step of

(i) injecting the second plastic material until it reaches the portion of the second mold cavity that defines the rim of the product.

2. A method according to claim 1 for molding a product having a side wall including an approximately longitudinal strip, wherein step (g) comprises shaping the first plastic material component to provide at least one said stabilizing region that is transverse to a parting line between the first common mold part and the first complementary mold part, whereby said longitudinal strip is defined by said transverse stabilizing region.

3. A method according to claim 2,

wherein step (b) comprises injecting a said first plastic material that is transparent, whereby said strip defines a transparent window in the side wall; and

wherein step (e) comprises injecting a said second plastic material that is nontransparent.

4. A method according to claim 1 for molding a product having a side wall including an approximately longitudinal strip, wherein step (g) comprises shaping the first plastic material component such that when the first plastic material component is contained in the second mold cavity, the second mold cavity defines at least one unfilled cavity region that is transverse to a parting line between the first common mold part and the second complementary mold part, whereby said longitudinal strip is defined by said unfilled transverse cavity region.

5. A method according to claim 4,

wherein step (b) comprises injecting a said first plastic material that is nontransparent; and

wherein step (e) comprises injecting a said second plastic material that is transparent, whereby said strip defines a transparent window in the side wall.

6. A method according to claim 1, for cyclic injection molding a plurality of thin-walled, hollow, plastic products, further utilizing a third mold cavity and a fourth mold cavity, the third mold cavity being defined by a second common mold part and the first complementary mold part, and the fourth mold cavity being defined by the second common mold part and the second complementary mold part, the method further comprising the steps of:

(h) during step (d), combining the second common mold part with the first complementary mold part to assemble the third mold cavity;

(i) during step (e), injecting a third plastic material into the third mold cavity;

(j) during step (f), solidifying the injected third plastic material to form a third plastic material component;

(k) during step (a), combining the second common mold part with the second complementary mold part to assemble the fourth mold cavity with the third plastic material attached to the second common mold part so that when the fourth mold cavity is assembled the third plastic material is contained within the fourth mold cavity;

(l) during step (b), injecting the fourth plastic material into the fourth mold cavity while the solidified third plastic material is contained therein; and

(m) during step (c), solidifying the injected fourth plastic material so as to form a fourth plastic material component that fuses with the third plastic material to produce a second hollow plastic product;

wherein step (j) comprises the step of

(n) shaping the third plastic material component such that when the third plastic material component is so contained in the fourth mold cavity the third plastic material component provides one or more stabilizing regions that rigidly secure the second common mold part in position in relation to the second complementary mold part in order to impede movement of the second common mold part in relation to the second complementary mold part during step (l), to thereby produce a second thin-walled plastic product having controlled dimensions.

7. A method according to claim 6, for producing said products having laminated walls,

wherein step (b) comprises the step of

(o) injecting the first plastic material until it reaches the parting line between the first common mold part and the first complementary mold part;

wherein step (e) comprises the step of

(p) injecting the second plastic material until it reaches the parting line between the first common mold part and the second complementary mold part;

wherein step (i) comprises the step of

(q) injecting the third plastic material until it reaches the parting line between the second common mold part and the first complementary mold part; and

wherein step (l) comprises the step of

(r) injecting the fourth plastic material until it reaches the parting line between the second common mold part and the second complementary mold part.

8. A method according to claim 6, wherein the first plastic material is the same as the third plastic material and the second plastic material is the same as the fourth plastic material.

9. A method according to claim 1, wherein step (g) further comprises providing a said first complementary mold part that is dimensioned in relation to the first common mold part such that when so combined with the first common mold part to assemble the first mold cavity, portions of the first complementary mold part contact portions of the first common mold part to rigidly secure the first common mold part in position in relation to the first complementary mold part in order to impede movement of the first common mold part in relation to the first complementary mold part during step (b).

10. A method according to claim 1, further comprising the step of

(j) between steps (c) and (d), separating said first common mold part with the first plastic material component attached thereto from said first complementary mold part without dividing that portion of said first complementary mold part that defines the rim of the product.

* * * * *

U.S. PATENT NO. 4,935,184
Giant International, Ltd. ("Motorola")
Motorola Talkabout Two-Way Radio T6500 ("Accused Product")
Claim Chart for SRD Trust Drawing No. D-5429

CLAIM 1 -- '184 PATENT	REMARK	REM. NO.	REF. FIGURE
A method of cyclic injection molding a thin-walled hollow, plastic product	*The Accused Product is a thin-walled hollow, plastic product and has been molded by cyclic injection molding.*	1	Figs. 1 and 3
having a closed end	*A closed end of the Accused Product is identified.*	2	Fig. 4
and an open end	*An open end of the Accused Product is identified.*	3	Fig. 4
with laminated walls	*Laminated walls (38) of the Accused Product are identified.*	4	Figs. 3 and 4
terminating in a rim at the open end,	*Laminated walls (38) of the Accused Product terminate in an identified rim at the open end.*	5	Fig. 4
utilizing a first mold cavity and	*The Accused Product is molded utilizing a first mold cavity.*	6	
a second mold cavity,	*The Accused Product is molded utilizing a second mold cavity (28).*	7	Fig. 4
the first mold cavity being defined by a first common mold part and a first complementary mold part,	*The first mold cavity utilized in molding the Accused Product is formed of a first common mold part (10) and a first complementary mold part.*	8	
and the second mold cavity being defined by the first common mold part and a second complementary mold part	*The second mold cavity (28) utilized in molding the Accused Product is formed of a first common mold part (10) and a second complementary mold part (26).*	9	Fig. 4
//			
the method comprising the steps of			

CLAIM 1 -- '184 PATENT	REMARK	REM. NO.	REF. FIGURE
//			
(a) combining the first common mold part with the first complementary mold part to assemble the first mold cavity;	*(a) The first common mold part (10) and the first complementary mold part are combined to assemble the first mold cavity.*	11	
(b) injecting a first plastic material into the first mold cavity;	*(b) A first plastic material (yellow) is injected into the first mold cavity of the Accused Product.*	12	
(c) solidifying the injected first plastic material;	*(c) The injected first plastic material (yellow) is solidified.*	13	
to form a first plastic material component	*The solidified first plastic material (yellow) forms a first plastic material component (20) of the Accused Product.*	14	Figs. 3 and 4
(d) combining the first common mold part with the second complementary mold part to assemble the second mold cavity	*(d) The first common mold part (10) and the second complementary mold part (26) are combined to assemble the second mold cavity (28) of the Accused Product.*	15	Fig. 4
with the first plastic material component attached to the first common mold part so that when the second mold cavity is assembled	*The first plastic material component (20) of the Accused Product is attached to the first common mold part (10) during assembly of the second mold cavity (28).*	16	Fig. 4
the first plastic material component is contained within the second mold cavity;	*The first plastic material component (20) of the Accused Product is contained within the second mold cavity (28).*	17	Fig. 4
(e) injecting a second plastic material having different characteristics than the first plastic material into the second mold cavity	*(e) In production of the Accused Product, a second plastic material (black) having different characteristics than the first plastic material (yellow) is injected into the second mold cavity (28).*	18	Figs. 3 and 4
while the first plastic material component is contained therein; and	*During injection of the second plastic material (black), the first plastic material component (20) of the Accused Product is contained within the second mold cavity (28).*	19	Fig. 4

CLAIM 1 -- '184 PATENT	REMARK	REM. NO.	REF. FIGURE
(f) solidifying the injected second plastic material so as to form a second plastic material component that fuses with the first plastic material component to produce a hollow plastic product;	*(f) After the second plastic material (black) of the Accused Product is injected, it solidifies to form a second plastic material component (32) of the Accused Product.*	20	Figs. 3 and 4
fuses with the first plastic material component to produce a hollow plastic product;	*The second plastic material component (32) fuses with the first plastic material component (20) to produce the Accused Product.*	21	Figs. 3 and 4
wherein step (c) comprises the step of			
(g) shaping the first plastic material component such that when the first plastic material component is so contained in the second mold cavity the first plastic material component provides one or more stabilizing regions that rigidly secure the first common mold part in position in relation to the second complementary mold part	*(g) The first plastic material component (20) has one or more identified stabilizing region(s) (30), that rigidly secure the first common mold part (10), in position in relation to the second complementary mold part (26).*	22	Figs. 3 and 4
in order to impede movement of the first common mold part in relation to the second complementary mold part during step (e),	*The identified stabilizing region(s) (30) of the first plastic material component (20) impede movement of the first common mold part (10) in relation to the second complementary mold part (26) that would otherwise result from the injection pressure of the second plastic material (black) during injection into the second mold cavity (28).*	23	Figs. 3 and 4
to thereby produce a thin-walled plastic product having controlled dimensions;	*The stabilization during the injection of the second plastic material (black) allows the thin-walled plastic product, the Accused Product, to be produced with controlled dimensions.*	24	Figs. 1 3 and 4

CLAIM 1 -- '184 PATENT	REMARK	REM. NO.	REF. FIGURE
wherein step (b) comprises the step of			
(h) injecting the first plastic material until it reaches the portion of the first mold cavity that defines the rim of the product; and	*The first plastic material (yellow) of the Accused Product reaches a rim of the Accused Product.*	25	Fig. 4
wherein step (e) comprises the step of			
(i) injecting the second plastic material until it reaches the portion of the second mold cavity that defines the rim of the product.	*The second plastic material (black) of the Accused Product reaches a rim of the Accused Product.*	26	Fig. 4

EXHIBIT 2
TO BORLAND DECLARATION

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CONFIDENTIAL OFFER OF COMPROMISE
Subject To Federal Rules Of Evidence § 408

RE: Sorensen Research & Development Trust v. Giant International, Ltd.
U.S. Patent No. 4,935,184

Dear Mr. Colton:

Please be advised that I have been retained by Sorensen Research & Development Trust ("SRDT"), owner of the United States Patent 4,935,184 ("'184 patent") to resolve issues of apparent patent infringement either by licensing, or, if necessary, through litigation.

As you recall, your client was contacted in October 21, 2004 by attorney Michael Kaler and provided with detailed drawings and analysis showing that the following Accused Products were substantially likely to have be manufactured utilizing a process that infringes the '184 patent:

Motorola Talkabout Two-Way Radio T6500
Motorola Talkabout Two-Way Radio T6550
Motorola Talkabout Two-Way Radio T5920/5950
Motorola Talkabout Two-Way Radio T5550
Motorloa Talkabout Two-Way Radio T4900

In response, you agreed to conduct a good faith investigation of the matter and also requested some information about Mr. Sorenson, his companies, and the identity of other licenses under the '184 patent. Mr. Kaler provided this information to you in June 2005.

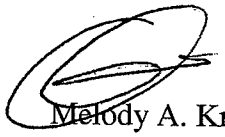
You have now had sufficient time to investigate the patent infringement materials and also investigate the company with whom you are dealing. My client's infringement investigation has not been disputed in any way.

Therefore, the time has come for your client to either enter into a license agreement or face legal consequences for continued infringement. I have prevailed on my client to extend one more short opportunity to your client to obtain a license for use of the '184 patent, and they have agreed to extend it until March 7, 2006. The fully paid-up license and release can be obtained for $230,000.

Please confirm that your client is willing to sign a licensing agreement and I will promptly forward the document to you. Otherwise, please confirm whether your office will accept service of process when a lawsuit is filed.

Thank you in advance for your prompt attention to this matter.

Sincerely,



Melody A. Kramer

POWELL GOLDSTEIN LLP

Atlanta ▪ Washington

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3 March 2006

Melody A. Kramer
KRAMER LAW OFFICE
9930 Mesa Rim Road
Suite 1600
San Diego CA 92121

Via Fax: 858.824.9073
Confirmation by US Mail

Re: Sorensen R&D Trust US Patent No. 4,935,184
Our Ref.: Giant International (148714.00000)

Dear Ms. Kramer:

We have received your letter of 2 February 2006 and our client, Giant International ("Giant") declines the offer to enter into a licensing agreement with your client Sorensen Research & Development Trust, Ltd. After an extensive review of the patent at issue, US Patent No. 4,935,184 (the "SRD '184 Patent"), and a comparison of the claims of the SRD '184 Patent to the Motorola® Talkabout® radios (the Giant Radios") listed in your letter, Giant has determined that the molding process for the Giant Radios does not fall within the bounds of the SRD '184 Patent claims.

Initially, of the Giant Radios listed in your letter, only the series beginning 65XX and 59XX are two-shot molded products. The last two, 5550 and 4900, are single-shot molded products.

The only independent claim in the SRD '184 Patent is Claim 1, which is reproduced below. Although Mr. Kaler sent us a mocked-up drawing and claims chart of what he believed the Giant Radio molding process entailed, Mr. Kaler's drawing both was incorrect and failed to include at least one claimed feature of the SRD '184 Patent that is not included in the molding process for the Giant Radios and indeed likely is the feature that may have made Claim 1 of the SRD '184 Patent allowable. That feature is step (g) highlighted below.

> 1. A method of cyclic injection molding a thin-walled hollow, plastic product having a closed end and an open end with laminated walls terminating in a rim at the open end, utilizing a first mold cavity and a second mold cavity, the first mold cavity being defined by a first common mold part and a first complementary mold

part, and the second mold cavity being defined by the first common mold part and a second complementary mold part, the method comprising the steps of

(a) combining the first common mold part with the first complementary mold part to assemble the first mold cavity;

(b) injecting a first plastic material into the first mold cavity;

(c) solidifying the injected first plastic material to form a first plastic material component;

(d) combining the first common mold part with the second complementary mold part to assemble the second mold cavity with the first plastic material component attached to the first common mold part so that when the second mold cavity is assembled the first plastic material component is contained within the second mold cavity;

(e) injecting a second plastic material having different characteristics than the first plastic material into the second mold cavity while the first plastic material component is contained therein; and

(f) solidifying the injected second plastic material so as to form a second plastic material component that fuses with the first plastic material component to produce a hollow plastic product;

wherein step (c) comprises the step of

(g) shaping the first plastic material component such that when the first plastic material component is so contained in the second mold cavity the first plastic material component provides one or more stabilizing regions that rigidly secure the first common mold part in position in relation to the second complementary mold part in order to impede movement of the first common mold part in relation to the second complementary mold part during step (e), to thereby produce a thin-walled plastic product having controlled dimensions;

wherein step (b) comprises the step of

(h) injecting the first plastic material until it reaches the portion of the first mold cavity that defines the rim of the product; and

wherein step (e) comprises the step of

(i) injecting the second plastic material until it reaches the portion of the second mold cavity that defines the rim of the product.

In my discussion, I will refer to SRD '184 Patent step (b) as the first shot and step (e) as the second shot.

Quite simply, the molding process for the Giant Radios does NOT shape and use the first shot plastic to stabilize the second mold, does NOT rigidly secure the first shot plastic in relation to the second mold part, and does NOT use the first shot plastic to impede movement of the first mold part in relation to the second mold part, as required in SRD '184 Patent step (g). In the molds for the Giant Radios, there are huge metal pins that stabilize the first and second mold parts together, and not the plastic from the first shot. At the pressures used in the molding process for the Giant Radios, the first shot plastic could NOT stabilize the second mold part, the second mold part would be forced away. Aside from the edges, the only part of the second mold part that nears the first shot plastic is a square that fits within the first shot plastic to keep the second shot rubber from oozing into the battery compartment. Without the metal pins, the mold halves would not stay together. Thus, the first shot plastic does not provide any stabilizing regions "that rigidly secure the first common mold part in position in relation to the second complementary mold part in order to impede movement of the first common mold part in relation to the second complementary mold part during" the injection of the second shot plastic.

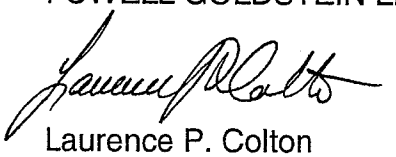
There also is an L-shaped lock on the side of the mold used in the Giant Radio molding process to secure the mold halves together. So, there are at least two components, the metal pins and the L-shaped lock, used to maintain the mold halves together during the Giant Radio molding process.

Additionally, the Giant Radio molding process does not include SRD '184 Patent step (i) as we understand it and as viewed in conjunction with the figures. As can be seen in the photographs of the Giant Radio in Mr. Kaler's drawing, T6500, or if you happen to have the actual sample Mr. Kaler used to make the drawing, the first shot plastic and the second shot plastic do not terminate at the same point. Thus, the second shot plastic does not "reach[ ] the portion of the second mold cavity that defines the rim of the product", but stops short of the rim. Keep in mind that the second shot plastic of the Giant Radios is not part of the casing, but is a soft rubber coating to allow the user to grip the product better and to protect the product from bumps and drops.

If you have any further questions, please contact me. However, based on Giant's knowledge of the injection molding field, the very narrow language of the SRD '184 Patent Claim 1 that does not read on any of the Giant Radios, and the United States Patent and Trademark Office (USPTO) prosecution history of the SRD '184

Patent, we see no reason not to stand firm on the belief that the Giant Radios do not infringe the claims of the SRD '184 Patent.

Respectfully,
POWELL GOLDSTEIN LLP



Laurence P. Colton

#999242 v1 - let-gi-030106-1
Cc: Giant International

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Melody A. Kramer, Esq.
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March 23, 2006

Mr. Laurence P. Colton, Esq.
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CONFIDENTIAL OFFER OF COMPROMISE
Subject To Federal Rules Of Evidence § 408

RE: Sorensen Research & Development Trust v. Giant International, Ltd.
U.S. Patent No. 4,935,184

Dear Mr. Colton:

Thank you for your letter dated March 3rd. It is my understanding that your client confirms that the process used to manufacture the following three products – (1) Motorola Talkabout Two-Way Radio T6500; (2) Motorola Talkabout Two-Way Radio T6550; and (3) Motorola Talkabout Two-Way Radio T5920/5950 – is a two-shot injection molding process, but claims that it does not include one feature of the '184 patent – step (g). You also claim that the second plastic shot stops short of the rim, thereby not meeting step (i) of the '184 patent.

Your assertion that the Giant Accused Process does not include stabilizing regions as described in the '184 patent, is based on the presence of mechanical locking structures including metal pins and an L-shaped lock utilized in the molding process. You assert that the Accused Products do not rely on stabilizing regions (30) in the first plastic material component (20) to prevent core deflection during the injection of the second plastic material. You then assert that the Accused Products do not satisfy the elements of claim 1, step (g), because Giant does not rely upon the first plastic to rigidly position the mold parts.

The fact that Giant uses mechanical locking structures illustrates that it recognizes the need to minimize core shift within the cavity. However, mechanical locking

structures are insufficient to completely eliminate all relative movement between the mold parts.

You imply that in Giant's process it is not necessary to stabilize the core using the special technique of Sorensen's '184 Patent. Whether a patent infringer believes that it is necessary or unnecessary to use a patented process is not an issue. The relevant consideration is whether the infringer literally and functionally performs every limitation of the patented claims. Patent infringement is not measured by whether the infringement is large or small, significant or insignificant, and intent is not an element of that infringement. The claims of Sorensen's '184 Patent do not require that the avoided core deflection be of any particular size. In fact it is expected from the invention that the movement of the core caused by the injecting the second plastic will be small because the core is stabilized during the second injection by the stabilizing regions (30) of the first plastic material component (20) in addition to any mechanical locking methods employed by the user.

The solid steel of the mold halves, when exposed to the ultra high pressures utilized in injection molding, is a very flexible material. Solid steel will deform to a certain calculable degree whenever exposed to any specific force, however small the force may be. A modern injection-molding machine is able to inject plastic into a steel mold cavity with a force that could inject water through a pipe against gravity into the stratosphere. In response to such forces, the deflection in a steel mold is always significant. In order to calculate such elastic deformation, one needs to analyze, as a minimum, the number, locations, sizes, and tolerances of all leader pins, bushings, cavity inserts, and respective apertures into which these various components fit.

All cores are unstable, because they will move when exposed to a force according to Hooke's Law of Elasticity, no matter how small the height to width ratio. The movement can be calculated from Young's Modulus of Elasticity, which for steel is 30 mio. lbs./sq. inch. The movement of the core in injection molding conditions is never zero.

The pressure from the secondly injected plastic will exert some lateral pressure on the core, this will force the core to move laterally away from the pressure, which results in the stabilizing regions (30) of the first plastic material component (20) becoming compressed between the core and cavity walls. The first plastic material component (20) will resist such compression, and thereby impede movement and contribute stabilization to the core.

The fact that molds generally have relatively massive interlocking mechanisms on their periphery proves a great need in the industry, including in the Giant Accused Process, to stabilize the cores in relation to the cavities. Nevertheless, locking

mechanisms in common use do not stabilize completely. It is well known in the art that such locking mechanisms cannot prevent the mold core from moving in relation to the mold cavity. Locking mechanisms can only reduce lateral displacement between mold halves. Finally, no locking mechanism is perfect, especially in practical long-term production environments. The fact that the relatively massive locking mechanisms are located on the periphery of the molds, preclude the locking mechanisms from completely resisting movement of the core in relation to the cavity, because of the relatively long distance between the mold cavity and the taper locking cam surfaces mechanisms. The steel of the mold positioned between the locking mechanisms and the mold cavity has some degree of flexibility and elasticity that enables the steel of the mold bases to expand and contract.

In an actual production of laminated plastic product, some portion of the core shift is impeded by the locking mechanisms, and another part is impeded by the stabilizing regions (30) of the first plastic material component (20). Even with these two methods operating in combination, core shift is not completely prevented. Note that the stabilizing regions (30) of the first plastic material component (20) are positioned very closely to the secondly injected plastic material, thereby avoiding the primary limitation of the various common locking mechanisms which are peripheral and distal relative to the core, and minimizing the effects of the flexibility and elasticity of the mold steel.

Reference to appropriate engineering texts can confirm that the elastic compression of steel resulting from small forces is linear. This actuality confirms the fact that no matter how small a force is applied, a resulting compression and therefore a resulting movement of the steel is generated. Under the high injection pressures of plastic injection molding the steel of a mold acts in many respects like a steel spring. If you compress a specific spring with 100 pounds it will shorten its length by 100 units (for example, inches). If you compress the same spring with only one pound it would then only shorten by one unit, and if you only compress the same spring with one one-thousandths of a pound, it would only shorten by one one-thousandths of a unit.

For all the reasons given above, we do not agree with your erroneous assertion that with the use of mechanical locks stabilizing metal pins, core shifting would not occur. As described with the analogy with the spring, core shift would always occur, but to a lesser degree. To have improved control of the wall thickness on thin-walled hollow products such as the Accused Products, it is necessary to have additional mechanisms to further reduce core shift, such as the use of the '184 patent.

As explained above, due in large part to the flexibility of steel, mechanical locking mechanisms are insufficient to prevent all undesirable relative mold part movement. The compressive resistance of plastic adds additional impediment to supplement the various forms of mechanical locks utilized in plastic injection molding to

further reduce the amount of undesirable mold movement. The goal is to bring the mold movement down to a level of acceptable tolerances, a goal for which the '184 patent can provide useful benefit. The goal is NOT complete elimination of relative mold part movement, which is not economically obtainable.

Accompanying this letter is a package containing a large 2.0 inch diameter guide pin for use in injection molding machines, the bushing that the guide pin would slide into during injection molding operations, and a hand-operated vise grip pliers. Additionally, we are providing a CD-ROM containing a set of five (5) pictures to demonstrate how the flexibility of steel allows for relative mold part movement during injection molding despite the use of heavy steel locking mechanisms.

As one can readily see in pictures 1, 2, and 3, the bushing easily slides over the length of the guide pin. However, picture 4 demonstrates that if one uses the vise grip pliers to squeeze the steel bushing applying only typical hand strength force, the bushing is sufficiently deformed that it becomes too tight to slide along the guide pin, and one can lift the heavy guide pin just by lifting the bushing. Alternatively, picture 5 illustrates that if one applies the vise grip pliers to the bushing when the guide pin is outside of the bushing, the deformation of the steel of the guide pin is such that the guide pin will no longer fit into the bushing.

This flexing deformation of a steel bushing is accomplished by mere hand pressure. This hand pressure on a vise grip is dwarfed by the thousands of pounds per square inch of injection pressure utilized in plastic injection molding, which generates many tons of force pushing the mold parts in different directions. One must then realize that not only the bushings, but also the pins and even the huge steel plates that make up the molds flex and twist when resisting many tons of force. The stabilizing regions provided by use of the '184 patent provides additional resistance to the relative movement of the mold parts, providing additional stability and dimensional control.

You also assert that step (i) of the '184 process is not met by Giant's process because the second shot "stops short of the rim." We disagree. "Rim" for purposes of this step should not be construed to be a single dimensional point, which it can never be. Rims are structures, whether in regard to the '184 patent claim language or the general use of the term in English. Rims are, by their very nature, three-dimensional. A rim is not a point, a rim is a structure, typically forming a boundary area or region including the edge of an object. Moreover, the context of the use of the word "rim" in the '184 patent claims further illustrates that the rim has dimension. The '184 patent does not refer to a point or line as a rim, nor does it refer to injection to the rim, it refers to injection to "the portion of the ... mold cavity that defines the rim." The portion of the mold cavity unambiguously refers to an area defining the boundaries of a structure, not a dimensionless point or line.

Based upon your letter and the information discussed above, we still believe that Giant International is infringing on the '184 patent and thus must either obtain a license or pay damages for infringement.

Please provide your client with a copy of this letter and allow them to reconsider their position. Also, please confirm that your office is authorized to accept service of process on behalf of Giant International if a lawsuit becomes necessary.

I will look for your client's response regarding the matters discussed in this letter no later than April 21, 2006.

Sincerely,

Melody A. Kramer

Enclosures:
1 CD-ROM
1 2.0" Guide Pin with matching Bushing
1 Vise Grip Pliers

POWELL GOLDSTEIN LLP

Atlanta ▪ Washington

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27 April 2006

Melody A. Kramer
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9930 Mesa Rim Road
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Via Fax: 858.824.9073
Confirmation by US Mail

Re: Sorensen R&D Trust US Patent No. 4,935,184
Our Ref.: 148714.00000

Dear Ms. Kramer:

I have reviewed your letter of 23 March 2006 with Giant and we have arrived at the same conclusion detailed in my letter to you of 3 March 2006 – that the molding process for the Giant Radios does not fall within the bounds of the SRD '184 Patent claims.

While your letter was quite detailed, it did not address the main point of my letter, namely, that the molding process for the Giant Radios does not include step (g) of Claim 1 of the SRD '184 Patent:

> 1. * * *
>
> (g) shaping the first plastic material component such that when the first plastic material component is so contained in the second mold cavity the first plastic material component provides one or more stabilizing regions that rigidly secure the first common mold part in position in relation to the second complementary mold part in order to impede movement of the first common mold part in relation to the second complementary mold part during step (e), to thereby produce a thin-walled plastic product having controlled dimensions;
>
> * * *.

As discussed in my letter, the molding process for the Giant Radios does NOT shape and use the first shot plastic to stabilize the second mold, does NOT rigidly secure the first shot plastic in relation to the second mold part, and does NOT use the first shot plastic to impede movement of the first mold part in relation to the second mold part, as required in SRD '184 Patent step (g). In the molds for the

Giant Radios, there are huge metal pins that stabilize the first and second mold parts together, *and not the plastic from the first shot.* The first shot plastic does not provide any stabilizing regions "that rigidly secure the first common mold part in position in relation to the second complementary mold part in order to impede movement of the first common mold part in relation to the second complementary mold part during" the injection of the second shot plastic.

Giant has confirmed that the stability of the mold core for the Giant Radios is not affected by the first injection. The stability is created by the guiding pin. For example, even if the injected plastic is removed and the second plastic is injected into the mold, this will not affect the core. So, even if the purported stabilizing region is removed, a second injection can still be made; however, the second plastic will fill the entire cavity. This is why Giant has the core – to prevent the second plastic from filling the interior of the radio housing.

Additionally, as I am sure you are aware, plastic double injection has existed from at least as early as early 1980. The first IBM PC keyboard in 1982 used double injection and 1980's AT&T telephones used double injection. The molding process for the Giant Radios is more akin to these now common place and simple prior art processes.

If you have any further questions, please contact me. However, as mentioned above and in my previous letter, based on Giant's knowledge of the injection molding field, on the very narrow language of the SRD '184 Patent Claim 1 that does not read on any of the Giant Radios, and on the United States Patent and Trademark Office (USPTO) prosecution history of the SRD '184 Patent, we stand firm on the belief that the Giant Radios do not infringe the claims of the SRD '184 Patent.

Respectfully,
POWELL GOLDSTEIN LLP

Laurence P. Colton

#1026464 v1 - let-gi-042006-1
Cc: Giant International

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May 12, 2006

Mr. Laurence P. Colton, Esq.
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Atlanta, GA 30309-3488

CONFIDENTIAL OFFER OF COMPROMISE
Subject To Federal Rules Of Evidence § 408

RE: Sorensen Research & Development Trust v. Giant International, Ltd.
U.S. Patent No. 4,935,184

Dear Mr. Colton:

Thank you for your letter dated April 27, 2006. I understand that your client's primary contention at this point is that the first shot of plastic in the Accused Products does not provide any stabilization and thus it contends that step (g) of Claim 1 of the '184 patent is not met. That contention simply does not comport with physics and the realities of injection molded plastic technology.

The arguments in your letter disclose a fundamental misunderstanding of step (g). "Stability of the mold core" is not a term that occurs in Claim 1 of the '184 patent. Step (g) requires the presence of:

> one or more stabilizing regions that rigidly secure the first common mold part in position in relation to the second complementary mold part in order to **impede movement of the first common mold part in relation to the second complementary mold part.**

Thus, the claim language refers to reducing relative movement between the two mold parts during the second injection, not mere stabilization of the mold core.

Your suggestion that Giant can demonstrate that step (g) does not occur by simply eliminating the first shot of plastic and using a "second shot" of plastic to fill the entire second mold cavity is nonsensical. The '184 patent is not implicated in a single-shot plastic product as your example would be. It is the ability to reduce relative movement between two mold parts during the second injection that makes the '184 patent distinctive.

Furthermore, the use of metal pins to stabilize the mold parts is helpful, but does not completely eliminate the relative movement of the mold parts. Use of the '184 process further impedes the relative movement of the parts beyond what metal pins are able to do, which has great importance to thin-walled products such as the Accused Products.

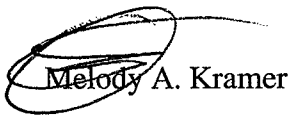
Dual-injection plastic products have indeed existed for decades, but Giant's process, as described to us and as shown by our investigation, uses more than mere dual-injection processes – it also uses the specific process of the '184 patent. Your general reference to "simple prior art processes" is unconvincing. My client has already successfully battled DaimlerChrysler in litigation in the United States District Court, ITC, and Federal Circuit Court of Appeals over the validity of the '184 patent. DaimlerChrysler asserted every conceivable basis for invalidity of the '184 patent and failed.

I doubt that your client is prepared to travel the same path that DaimlerChrysler has, especially when your client can eliminate the risks and excessive expenditures of litigation by merely obtaining a license, though the window of opportunity is swiftly narrowing. It would be prudent for Giant to join the scores of other licensees of the '184 patent that include the following companies: Adidas-Salomon, Atomic Ski, Bosch, Chicony Electronics, DaimlerChrysler AG, Dremel, Garmin International, Irwin Tools, Milwaukee Electric (Milwaukee Tools), Rubbermaid, Skil, Strait-Line, and The Stanley Works (Stanley Tools).

Please review the above information with your client and advise them that I have received authorization from my client to briefly extend its offer to license and release Giant International for use, past or future, of the '184 patent. Time is of the essence. We have an obligation to protect the value of the licenses that other companies have already obtained by vigorously prosecuting infringers. We extended an offer of $230,000 that expired on March 7, 2006. I may be able to convince my client to renew that offer if your client expresses a serious interest in licensing before June 16, 2006.

I will look forward to receiving confirmation from your client that they are willing to enter into a licensing/release agreement no later than June 16, 2006. Otherwise, we will have to assume that Giant International prefers litigation. Because I have not received any indication to the contrary, I assume that service of the complaint should be made directly on Mr. Meyers at Giant.

Sincerely,



Melody A. Kramer

EXHIBIT 3
TO BORLAND DECLARATION

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FINAL PRE-LITIGATION NOTICE

October 17, 2007

Mr. Laurence P. Colton, Esq.
Powell Goldstein LLP
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Atlanta, GA 30309-3488

CONFIDENTIAL OFFER OF COMPROMISE
Subject To Federal Rules Of Evidence § 408

RE: Sorensen Research & Development Trust v. Giant International, Ltd.
U.S. Patent No. 4,935,184

Dear Mr. Colton:

We still have received no response to my last letter explaining in detail the flaws in your client's arguments for non-infringement of the '184 patent and therefore we presume that you have conceded those points.

Due to litigation against other infringers of the '184 patent, this matter has taken a slower track. However, seeing no more reason for delay and absolutely no willingness on the part of your client to obtain a license for their use of the '184 process, I am recommending to my client that suit be filed forthwith.

If the enclosed Tolling Agreement is not executed and returned to my office on or before October 25, 2007, suit will immediately be filed against Giant International, Ltd. your client for infringement of the '184 patent.

Sincerely,

Melody A. Kramer

enclosure

TOLLING AGREEMENT BETWEEN THE SORENSEN RESEARCH & DEVELOPMENT AND GIANT INTERNATIONAL LTD.

WHEREAS, Jens Erik Sorensen as Trustee of the **SORENSEN RESEARCH & DEVELOPMENT TRUST** ("SRDT"), having its primary offices at 9930 Mesa Rim Road, San Diego, California, 92121, is the owner and possessor of all exclusive United States rights under U.S. Patent No. 4,935,184 ("the '184 Patent"), invented by Jens Ole Sorensen ("Sorensen"); and

WHEREAS, **GIANT INTERNATIONAL LTD.** ("GIANT"), is a corporation having principal offices in Atlanta, Georgia.

WHEREAS, the parties are in dispute with regard to the applicability of the '184 patent to certain products manufactured, imported and/or sold by GIANT, and the parties desire to defer the need for litigation and wish to engage in substantive discussions directed towards a resolution of the matter;

WHEREAS, SRDT will rely upon this agreement to avoid the otherwise immediate need for filing a lawsuit;

NOW IT IS AGREED THAT:

1. In any litigation or arbitration between SRDT and GIANT, or its subsidiaries or divisions involving the '184 patent, all periods of limitation defined herein, and all state and federal statutes of limitations, statutes of repose and/or equitable defenses for recovering damages, including but not limited to, 35 U.S.C. § 286 and California Code of Civil Procedure ("CCP") § 337, shall be tolled from the effective date of this Tolling Agreement through and including the date of initiation of any such litigation or arbitration.

TOLLING AGREEMENT BETWEEN THE SORENSEN RESEARCH & DEVELOPMENT AND GIANT INTERNATIONAL LTD.

2. This agreement shall not be used in such litigation for any other purpose other than to determine the operation and effective dates of all state and federal statutes of limitations, statutes of repose and/or equitable defenses for recovering damages, and shall not operate as a waiver of any defense or as an admission of liability.

3. The undersigned is authorized to execute the agreement on behalf of the party or parties for whom he or she has signed.

GIANT INTERNATIONAL LTD.

_____ _____
Date

_____
Name & Title

SORENSEN RESEARCH & DEVELOPMENT TRUST

_____ _____
Melody A. Kramer, Attorney for Sorensen Research & Development Trust
Date